DOCUMENT RESUME

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ABSTRACT

This assessment sample provides information on the Missouri Assessment Program (MAP) for grade 8 mathematics. The sample consists of three items taken from the test booklet and scoring guides for the three items. The items assess number theory, data analysis, probability and statistics, and patterns and relationships. (MM)

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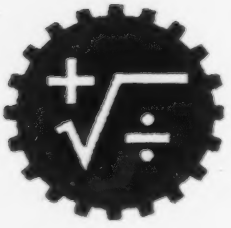
RELEASED ITEMS

Missouri Assessment Program (MAP)
Intermediate Mathematics
Spring 2000
Grade 8



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GRADE 8

FROM TEST BOOKLET

Session 1-Items 4 and 10

Session 2-Item 8

SKATING NIGHT

Directions

Numbers 4 through 6 are about a school skating night. Show all of your work and write your answers directly in this book.

4 The student council at your school wants to sponsor a family skating night at a local roller rink. The skating night is going to be a fundraiser to help purchase new sports equipment for the school.

During the skating night, a certificate for a free soda from the refreshment stand will be given away every 15 minutes. A pass to the skating rink will be given away every 25 minutes. If the skating night starts at 6:30 P.M., what is the first time a free soda ***and*** a pass will be given away together? In the box below, provide the work that shows how you arrived at your answer.

$tudent Coun¢il Budget

Directions

Show all of your work and write your answers directly in this book.

10 The Miffland Elementary School Student Council needs at least $2,000 to cover its budget. The student council consists of 4 eighth-graders, 3 seventh-graders, and 3 sixth-graders. The Miffland Diner has agreed to help the student council by sponsoring a fundraising dinner. The cost of each ticket for the dinner will be $8. Only student council members will sell the tickets, and they will keep $4 from each ticket sold.

Each grade will need to raise a different percentage of the $2,000:

- 40% for eighth grade
- 36% for seventh grade
- 24% for sixth grade

Create a table on Page 13 to organize the above information. Include the following:

- the ***least*** amount of money the student council members representing each grade need to raise
- the ***minimum*** number of tickets that should be sold by each council member for each grade
- the ***total*** amount of money that should be collected

Provide the work that shows how you arrived at your answer.

8 Anita plans to increase the weight she lifts by 1 pound each week for the next 4 weeks, by 2 pounds each week for the following 4 weeks, and by $2\frac{1}{2}$ pounds each week for the last 4 weeks. If she has been lifting 35 pounds, what weight should she be lifting at the end of the 12 weeks? In the box below, provide the work that shows how you arrived at your answer.

GRADE 8

SCORING GUIDES

Session 1-Items 4 and 10

Session 2-Item 8

Session: 1
Item No.: 4
Page No.: 6
Content Standard(s): 5 Mathematical Systems and Number Theory
Process Standard(s): 1.6

Exemplary Response:

- 7:45 (P.M.)

AND

- Free Soda 15, 30, 45, 60, 75
  Skating Pass 25, 50, 75
  75 minutes = 1 hour 15 minutes
  6:30 + 1:15

  OR

  Other valid process

Score Points:

2 points	Exemplary Response
1 point	Correct process; error in computation/choice OR Correct answer
0 points	Other

Session: 1
Item No.: 10
Page No.: 12–13
Content Standard(s): 3 Data Analysis, Probability, and Statistics
Process Standard(s): 3.1

Score Points:

4 points — The student's response fully addresses the performance event.

The response:
- demonstrates knowledge of the mathematical concepts and principles needed to complete the event.
- communicates all process components that lead to an appropriate and systematic solution.
- may have only minor flaws with no effect on the reasonableness of the solution.

3 points — The student's response substantially addresses the performance event.

The response:
- demonstrates knowledge of the mathematical concepts and principles needed to complete the event.
- communicates most process components that lead to an appropriate and systematic solution.
- may have only minor flaws with minimal effect on the reasonableness of the solution.

2 points — The student's response partially addresses the performance event.

The response:
- demonstrates a limited knowledge of the mathematical concepts and principles needed to complete the event.
- communicates some process components that lead to an appropriate and systematic solution.
- may have flaws or extraneous information that indicates some lack of understanding or confusion.

Session: 1
Item No.: 10
Page No.: 12–13
Content Standard(s): 3 Data Analysis, Probability, and Statistics
Process Standard(s): 3.1

1 point	The student's response minimally addresses the performance event. The response: • demonstrates a limited knowledge of the mathematical concepts and principles needed to complete the event. • communicates few or no process components that lead to an appropriate and systematic solution. • may have flaws or extraneous information that indicates lack of understanding or confusion.
0 points	Other—Responses not addressed by the Condition Codes: Examples of "0": Work consists of copying the prompt information only. Work indicates no mathematical understanding of the task.

Session:	1
Item No.:	10
Page No.:	12–13
Content Standard(s):	3 Data Analysis, Probability, and Statistics
Process Standard(s):	3.1

EXAMPLE OF POSSIBLE STRATEGY

Accept any valid strategy that leads to a correct solution. One sample strategy is shown below.

Sample Strategy

Calculates the amount each grade needs to raise and the number of tickets each member needs to sell. Uses the information to construct a table to represent the information.

1) Calculates the amount each grade level needs to raise

$2000 × 24% = $480 (for the sixth-grade members)
$2000 × 36% = $720 (for the seventh-grade members)
$2000 × 40% = $800 (for the eighth-grade members)

2) Calculates the number of tickets each member of the student council needs to sell at each grade level

$480 ÷ 4 = 120 (tickets) 120 ÷ 3 = 40 (tickets per sixth-grade member)
$720 ÷ 4 = 180 (tickets) 180 ÷ 3 = 60 (tickets per seventh-grade member)
$800 ÷ 4 = 200 (tickets) 200 ÷ 4 = 50 (tickets per eighth-grade member)

3) Calculates the total amount raised by each grade level

$480 × 2 = $960 $720 × 2 = $1440 $800 × 2 = $1600

4) Calculates the total amount raised by all the grades

$960 + $1440 + $1600 = $4000

Session: 1
Item No.: 10
Page No.: 12–13
Content Standard(s): 3 Data Analysis, Probability, and Statistics
Process Standard(s): 3.1

5) Constructs a table similar to the one shown below

STUDENT COUNCIL BUDGET

Grade	Amount to Raise	Number of Tickets	Total Collected
6th	$480	40	$960
7th	$720	60	$1,440
8th	$800	50	$1,600
Totals	$2,000	150	$4,000

Session: 2
Item No.: 8
Page No.: 12
Content Standard(s): 4 Patterns and Relationships
Process Standard(s): 1.6

Exemplary Response:

- 57 (pounds)

AND

- $1 \times 4 = 4$
  $35 + 4 = 39$

  $2 \times 4 = 8$
  $39 + 8 = 47$

  $2\frac{1}{2} \times 4 = 10$
  $47 + 10$

  OR

  $1 \times 4 = 4$
  $2 \times 4 = 8$
  $2\frac{1}{2} \times 4 = 10$
  $4 + 8 + 10 = 22$
  $35 + 22$

  OR

  Other valid process

Session: 2
Item No.: 8
Page No.: 12
Content Standard(s): 4 Patterns and Relationships
Process Standard(s): 1.6

Score Points:

2 points	Exemplary Response
1 point	Correct process; error in computation OR Correct answer
0 points	Other